

Code No: 56031

JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY HYDERABAD

B. Tech III Year II Semester Examinations, November/December - 2015

COMPILER DESIGN

(Computer Science and Engineering)

Time: 3 hours

Max. Marks: 75

Answer any five questions
All questions carry equal marks

1. Explain the following:
 - a) Cross Compiler
 - b) LEX. [5+10]
2. Consider the following grammar:

$$R \rightarrow R' | R | RR | (R) | a | b$$
 - a) Eliminate Left Recursion in above Grammar
 - b) Compute FIRST SET for the above Grammar
 - c) Compute FOLLOW SET for the above Grammar. [5+5+5]
3. Construct LALR parsing table for the Grammar:

$$E \rightarrow E+T | TT \rightarrow T * F | T F \rightarrow | id$$
 [15]
- 4.a) Give SDT for the following Simple Desk Calculator.
 - b) Explain about Type System. [10+5]
- 5.a) Explain various storage organization techniques.
 - b) Explain the stack allocation strategy with example. [5+10]
- 6.a) What are loop invariant components? Explain how they affect the efficiency of program?
 - b) Explain about
 - i) Copy Propagation
 - ii) Code Motion [8+7]
- 7.a) Explain briefly about the Global Optimization
 - b) Explain briefly about data-flow analysis? [8+7]
8. Explain about generic code generation algorithm. [15]

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